

## **Z - LISTING OF MITIGATION PROJECTS**

This portion of the appendix is intended to be used for updating projects as they are added, completed, or modified. The listing is included as part of the Plan and also here in the appendix so it can easily be removed and modified on a regular basis. Federal requirements state that updates need to be made, at a minimum, every 5 years. Projects tend to progress at a much faster rate and the profile of the County may change before the 5-year requirement. Therefore, this section is intended to be reviewed and updated on an annual basis.



# Macomb County

## Hazard Mitigation Projects

(Sorted by Municipality)

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### Armada Township

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**Project Number** HM 05-002 **Priority:** 1 **Hazard Category:** Infrastructure

**Title** Emergency Siren System

**Lead Manager** Don Eison, Supervisor, Armada Township, 586-784-5200

**Description of Action** Armada Township is still very undeveloped but is predicted to have significant development increases in the upcoming years. Installing an emergency siren system early on will ensure all areas of the community are covered before residential and commercial development begins playing a major role in land disputes for placement of these sirens.

**Schedule** Initiate Hazard Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** Macomb County

**Potential Sources of Financial Assistance** Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.

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**Project Number** HM 05-003 **Priority:** 2 **Hazard Category:** Infrastructure

**Title** Trailer Park Shelter

**Lead Manager** Don Eison, Supervisor, Armada Township, 586-784-5200

**Description of Action** Mobile and manufactured home construction often times lends it to be extremely vulnerable during high wind events and tornadoes. The township wishes to install 'safe rooms' in the mobile home parks to provide shelter during these events.

**Schedule** Initiate Hazard Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** Macomb County

**Potential Sources of Financial Assistance** Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.

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## Armada, Village of

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<b>Project Number</b>	FM 01-008	<b>Priority:</b>	1	<b>Hazard Category:</b>	Structural
<b>Title</b>	Floodproof Home				
<b>Lead Manager</b>	Nancy Parmenter, President, Village of Armada, 586-784-9151				
<b>Description of Action</b>	A low-sitting house in the village of Armada is proposed for mitigation activities because ponding water in its yard goes right up to the back of the house during rainy weather conditions. The village is an NFIP-participating community and the house is located just outside the 100-year floodplain (Zone AE) on the area's Flood Insurance Rate Map. Possible mitigation strategies include creation of a nearby retention pond or berm to keep waters from collecting in the homeowner's yard. Floodproofing of the home would be helpful.				
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County				
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, Flood Mitigation Assistance Program. Local sources, foundations, nonprofit organizations, and/or the involved homeowner might also be useful to assist with project funding.				

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## Bruce Township

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**Project Number** FM 01-009 **Priority:** 1 **Hazard Category:** Structural

**Title** Mitigate basement flooding on 34 Mile Road

**Lead Manager** Gary Schocke, Supervisor, Bruce Township, 586-752-4585

**Description of Action** Two houses on 34 Mile Road near the Mahaffy Drain in Bruce Township have experienced basement flooding as a result of area land developments and increased water runoff. The houses have installed sump pumps to alleviate this problem. Although minor damages have occurred, these houses are not located in an officially mapped floodplain area. Possible mitigation strategies include drain cleaning or improvement to expand its capacity, or other structural projects to slow or divert the flow of runoff waters.

**Schedule** Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** Macomb County

**Potential Sources of Financial Assistance** Michigan Department of Agriculture Intercounty Drain Program or existing county drain maintenance funds. Local funding sources, foundations, nonprofit organizations, or corporate giving programs might provide additional funds necessary for some or all of the proposed solutions.

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**Project Number** FM 01-010 **Priority:** 2 **Hazard Category:** Infrastructure

**Title** Mitigate flooding of roads within Bruce Township

**Lead Manager** Gary Schocke, Supervisor, Bruce Township, 586-752-4585

**Description of Action** Bruce Township road flooding over M-53. The traffic count along that area is roughly 18,500 vehicles per day, but it is assumed at this point in the analysis that the flooding merely causes traffic delays rather than requiring detours.

**Schedule** Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** Macomb County

**Potential Sources of Financial Assistance** Michigan Department of Agriculture Intercounty Drain Program or existing county drain maintenance funds. Local funding sources, foundations, nonprofit organizations, or corporate giving programs might provide additional funds necessary for some or all of the proposed solutions.

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## Centerline, City of

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**Project Number** HM 05-004

**Priority:** 1

**Hazard Category:**

Life Safety

**Title** Establish Ordinance to locate all Future Power Lines Underground

**Lead Manager** Mary Ann Zielinski, Mayor, Center Line, 586-757-6800

**Description of Action** Power outages are a recurring theme associated with damage to aboveground power lines during severe winds, thunderstorms, snow and ice storms, and other severe weather incidents. This action is to have the municipal government pass an ordinance to require all new installations of power lines and electrical services to be placed below ground.

**Schedule** Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** Macomb County, Michigan State Police Emergency Management Division

**Potential Sources of Financial Assistance** Hazard Mitigation Grant Program, local utilities, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might also be able to provide needed funding.

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**Project Number** HM 05-005

**Priority:** 2

**Hazard Category:**

Infrastructure

**Title** Trim trees that encroach on power lines

**Lead Manager** Mary Ann Zielinski, Mayor, Center Line, 586-757-6800

**Description of Action** The scope of this project is to identify and trim those trees that are beginning to encroach into the safety zone of overhead lines throughout the municipality. The project manager will conduct a survey and identify trees that if damaged by severe weather may cause infrastructure failure. This project has been estimated to cost \$8K

**Schedule** Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding

**Potential Sources of Technical Assistance** Macomb County, Michigan State Police Emergency Management Division

**Potential Sources of Financial Assistance** Hazard Mitigation Grant Program, local utilities, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might also be able to provide needed funding

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## Chesterfield Township

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<b>Project Number</b>	FM 01-051	<b>Priority:</b>	1	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate flooding at Canal south of Field Street in Section 32				
<b>Lead Manager</b>	Jim Ellis, Supervisor, Chesterfield Township, 586-949-0400				
<b>Description of Action</b>	<p>In Section 32 of Chesterfield Township, there is a canal south of Field Street which has about 9 nine homes and 3 commercial buildings near it that have been heavily affected by flooding during periods of high water levels along Lake St. Clair. In 1985 and 1986, flood waters reached depths of 6 to 12 inches around the homes. The commercial buildings are located where the canal meets the Lake Waters. They are a party store, a marina office, and a gas dock, and they suffered floodwaters that were up to 18 inches deep. Much of the area is identified as a 100-year floodplain (Zone A3). Although some of the houses were classified with a lesser floodplain designation (Zone B), the key on the FIRM document was rather unclear about what the designation really meant for the area. I believe the Zone B classification here refers to an area subject to 100-year flood events of less than one-foot water depths. The community is a participating NFIP member.</p> <p>Possible mitigation strategies for this area of shoreline flooding include some sort of flood wall project that might be most cost-beneficial to protect against storm surges. Canal redesign ideas might also be explored. Some houses could be elevated. A new pump station project should greatly help alleviate flooding to the at-risk properties along Jefferson Avenue.</p>				
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA				
<b>Potential Sources of Financial Assistance</b>	Home elevations could be handled by the Flood Mitigation Assistance Program or Hazard Mitigation Grant Program. Flood wall and engineering options might be explored by the U.S. Army Corps of Engineers. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners or businesses (also business associations or economic development funds) might also be used to assist with project funding.				
<b>Project Number</b>	FM 01-011	<b>Priority:</b>	2	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate flooding of 11 residences in Section 32				
<b>Lead Manager</b>	Jim Ellis, Supervisor, Chesterfield Township, 586-949-0400				
<b>Description of Action</b>	<p>Just northeast of Project FMP 01-051, in section 32 of Chesterfield Township, is a 100-year floodplain area (Zone A3) along a canal, with about 11 houses (including one of the NFIP's identified repetitive-loss properties) that experienced flooding of 6 to 12 inches in the 1970s. Pumps and sandbagging were needed during the 1980s to reduce damages. The community is a participating NFIP member.</p> <p>Possible mitigation strategies include acquisition of the repetitive loss property; elevation of flood-prone structures; and re-engineering the canal to prevent flooding. A new pump station project should greatly help alleviate flooding to the at-risk properties along Jefferson Avenue.</p>				
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA				
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, re-engineering options possibly researchable by the U.S. Army Corps of Engineers. Local sources, foundations, nonprofit organizations, involved homeowners, or corporate giving				

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programs might also be able to provide needed funding.

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<b>Project Number</b>	FM 01-012	<b>Priority:</b> 3	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate flooding for 106 residences along shoreline of Section 32			
<b>Lead Manager</b>	Jim Ellis, Supervisor, Chesterfield Township, 586-949-0400			
<b>Description of Action</b>	In the vicinity of the shoreline of Section 32 of Chesterfield Township, the meaning of the Zone B flood designation has been interpreted as indicative of areas that suffer 100-year flooding of less than one foot of water depths. There are about 106 houses located east of Jefferson and south of Farwell that are in this significant risk category, with 2 to 4 inches of floodwaters in the houses in the 1970s, and sandbagging efforts required since then to reduce damages. The community is a participating NFIP member. Possible mitigation strategies include acquiring or elevating the repetitive-loss property. Some engineered solution might be found for canal redesign to prevent overflow waters from flooding the roads and houses nearby.			
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA			
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, re-engineering options possibly researchable by the U.S. Army Corps of Engineers. Local sources, foundations, nonprofit organizations, involved homeowners, or corporate giving programs			
<b>Project Number</b>	FM 01-013	<b>Priority:</b> 4	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate flooding of 13 residences southwest of Cotton Road in Section 28			
<b>Lead Manager</b>	Jim Ellis, Supervisor, Chesterfield Township, 586-949-0400			
<b>Description of Action</b>	In Section 28 of Chesterfield Township, southwest of Cotton Road, is a shoreline area with about 13 homes that has experienced flooding from Lake St. Clair. These houses are in an identified 100-year floodplain area (Zone A3) and flood depths have been as much as 6 to 8 inches in these homes. During the current period of low lake levels, mitigation actions should be taken to prevent further flooding when lake levels rise again. The community is a participating NFIP member. Possible mitigation strategies include replacing an existing dirt berm and emergency sandbagging efforts with a more permanent flood wall structure to protect houses from shoreline flooding during periods of high lake levels and storm surges. The repetitive-loss property could be acquired or elevated. Canals would probably also need some engineered solution to discourage overflow waters from flooding the roads and houses nearby.			
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA			
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, re-engineering options possibly researchable by the U.S. Army Corps of Engineers. Local sources, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might also be able to provide needed funding.			
<b>Project Number</b>	FM 01-014	<b>Priority:</b> 5	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate flooding in 36 residences along Sugarbush Road in Section 27			
<b>Lead Manager</b>	Jim Ellis, Supervisor, Chesterfield Township, 586-949-0400			
<b>Description of Action</b>	This project concerns houses in Section 27 of Chesterfield Township, along Sugarbush Road, south of the high school. Although the area has been classified as between a 100			



	<p>and 500-year floodplain (Zone B), there are 36 houses that have been assessed as higher-risk by local officials. Water floods around these houses to a depth of 8 to 12 inches, and residents have been observed using sandbags to prevent water damages to the structures. The community is a participating NFIP member.</p> <p>Possible mitigation strategies include structural flood protection measures to replace sandbagging efforts; improved road drainage and use of retention basins; continued monitoring for worsening risk since some surface water retention may have been intended by the area's developmental design.</p>		
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.		
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA		
<b>Potential Sources of Financial Assistance</b>	Existing county road or drain maintenance/improvement funds. Local funding sources, foundations, nonprofit organizations, or corporate giving programs might provide additional funds necessary for some or all of the proposed solutions.		
<b>Project Number</b>	FM 01-015	<b>Priority:</b> 6	<b>Hazard Category:</b> Structural
<b>Title</b>	Mitigate flooding of structures west of Jefferson and north of Anchor Road in Section 32		
<b>Lead Manager</b>	Jim Ellis, Supervisor, Chesterfield Township, 586-949-0400		
<b>Description of Action</b>	<p>In Section 32 of Chesterfield Township there is an area west of Jefferson and north of Anchor Road that has found it necessary to use sandbags to try to protect the structures there, which are all in a 100-year floodplain area (Zone A3). The structures are a party store, laundromat, and 17 homes. The community is a participating NFIP member. Possible mitigation strategies include elevation of flood-prone structures; re-engineering the canal to prevent flooding. A new pump station project should greatly help alleviate flooding to the at-risk properties along Jefferson Avenue.</p>		
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.		
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA		
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, U.S. Army Corps of Engineers. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners or businesses (also business associations or economic development funds) might also be useful to assist with project funding.		
<b>Project Number</b>	FM 01-016	<b>Priority:</b> 7	<b>Hazard Category:</b> Structural
<b>Title</b>	Mitigate flooding at 4 apartment buildings in Section 22.		
<b>Lead Manager</b>	Jim Ellis, Supervisor, Chesterfield Township, 586-949-0400		
<b>Description of Action</b>	<p>In Section 22 of Chesterfield Township, there are four apartment buildings that have nearby drainage back-ups that cause waters to come right up to the buildings. The buildings are in an area designated as between a 100 and 500-year floodplain (Zone B) on the community's FIRM, and many seniors live in the area. The community is an NFIP participant. Some local money is being generated and should be available to provide matching funds for grants or drain-cleaning activities.</p> <p>Possible mitigation strategies include construction of a retention pond, berm or wall to keep floodwaters out of the at-risk buildings.</p>		
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.		
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA		



<b>Potential Sources of Financial Assistance</b>	Local road or drainage authorities, other local funding sources, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might provide additional funds necessary for some or all of the proposed solutions.			
<b>Project Number</b>	FM 01-017	<b>Priority:</b>	8	<b>Hazard Category:</b> Structural
<b>Title</b>	Mitigate flooding of 17 homes along Auvase Creek in Section 28			
<b>Lead Manager</b>	Jim Ellis, Supervisor, Chesterfield Township, 586-949-0400			
<b>Description of Action</b>	In Section 28 of Chesterfield Township, there are about 17 homes along Wand Street and the Auvase Creek that are located in a 100-year floodplain (Zone A3). Local officials agree that the actual flood risks are significant, and that floodwaters have had moisture effects on elements of the homes and their furnishings, so actions are recommended to mitigate against future flood damages. The community is a participating NFIP member. Possible mitigation strategies include elevation of structures. Creation of berms or floodwalls may also help prevent flooding.			
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA			
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program, U.S. Army Corps of Engineers. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.			
<b>Project Number</b>	FM 01-018	<b>Priority:</b>	9	<b>Hazard Category:</b> Structural
<b>Title</b>	Mitigate Flooding for 2 houses near Salt River in Section 23			
<b>Lead Manager</b>	Jim Ellis, Supervisor, Chesterfield Township, 586-949-0400			
<b>Description of Action</b>	In Section 23 of Chesterfield Township there are two houses that are in a designated 100-year floodplain (Zone A3). Local officials consider these houses to be at higher risk of flooding. They are near the Salt River, south of Callens Road and west of Hooker Road, and the community is a participating NFIP member.			
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA			
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program, U.S. Army Corps of Engineers. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.			
<b>Project Number</b>	FM 01-019	<b>Priority:</b>	10	<b>Hazard Category:</b> Structural
<b>Title</b>	Mitigate flooding of business in Section 15			
<b>Lead Manager</b>	Jim Ellis, Supervisor, Chesterfield Township, 586-949-0400			
<b>Description of Action</b>	In Section 15 of Chesterfield Township, there is a business located in an NFIP-identified 100-year floodplain (Zone A2), but whose flood risks are now reported by local officials to exceed those of that classification. The community is an NFIP participant. Possible mitigation strategies include elevation, relocation, or acquisition of the structure. Creation of berms or floodwalls may also help prevent flooding.			
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion			

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of project will be accomplished within one year of receiving funding.

***Potential Sources of  
Technical Assistance***

Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA

***Potential Sources of  
Financial Assistance***

Potential sources of financial assistance: Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.

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## Clinton Township

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<b>Project Number</b>	FM 01-002	<b>Priority:</b>	1	<b>Hazard Category:</b>	Structural
<b>Title</b>	Flood Mitigation of home within Moravian Manor				
<b>Lead Manager</b>	Paul Brouwer, Emergency Coordinator, Clinton Township, 586-723-8069				
<b>Description of Action</b>	Public acquisition and management of lands that are vulnerable to damage from flooding hazards. Properties that have been identified in the Moravian Manor subdivision are located within the 100-year floodplain (Zone AE). The Base Flood Elevation Line is 593 feet. A residential unit, which is exposed to a severe flooding hazard, has been identified, and the owner has agreed to sale at fair market value. The total amount of acreage is 2.752 acres, with an estimated appraised value of \$102,000.00. Estimated incidental costs (appraisal fees) total \$8,000.00. The total acquisition costs for the vacant lots and one residential unit is estimated at \$110,000.00.				
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.				
<b>Potential Sources of Financial Assistance</b>	FMA, HMGP, CDBG, Clean Michigan Initiative, and USACE Challenge 21 Program.				
<b>Project Number</b>	FM 01-001	<b>Priority:</b>	2	<b>Hazard Category:</b>	Structural
<b>Title</b>	Flood Mitigation of property adjacent to Frank H. Budd Park				
<b>Lead Manager</b>	Paul Brouwer, Emergency Coordinator, Clinton Township, 586-723-8069				
<b>Description of Action</b>	Adjacent properties to Frank H. Budd Park in Clinton Township have been targeted for acquisition to complete an assembly of properties. Properties have been acquired utilizing the Township General Fund, Community Development Block Grant (CDBG) Program and the Michigan Natural Resources Trust Fund Grants. These proposed acquisitions include four small lots located in Riverside Gardens Subdivision. Initially, the CDBG Program was utilized to relocate families because of severe flooding. These lots are vacant and within the 100-year floodway of the Clinton River. This acquisition would accomplish acquisition of the entire subdivision by Clinton Township and vacating of an unnecessary public road (Kerner Street). In addition, it would complete the expansion of Frank H. Budd Park that would include contiguous properties without non-township owned land surrounded by the park. The estimated appraised value is \$76,000.00 with incidental costs of \$24,000.00. The incidental costs include the possible removal of old house foundations, debris, and septic tanks. This property would be used only for public recreation.				
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.				
<b>Potential Sources of Financial Assistance</b>	FMA, HMGP, CDBG, Clean Michigan Initiative, and USACE Challenge 21 Program.				
<b>Project Number</b>	FM 01-021	<b>Priority:</b>	3	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Mitigate road flooding of Clinton River Road				
<b>Lead Manager</b>	Paul Brouwer, Emergency Coordinator, Clinton Township, 586-723-8069				
<b>Description of Action</b>	Clinton Township area of road flooding on Clinton River Road. This road actually becomes unsafe to use during flood events.				

<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA			
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.			
<b>Project Number</b>	FM 01-052	<b>Priority:</b> 4	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Mitigate road flooding of Groesbeck Road south of 16 Mile Road			
<b>Lead Manager</b>	Paul Brouwer, Emergency Coordinator, Clinton Township, 586-723-8069			
<b>Description of Action</b>	Clinton Township area of road flooding at Groesbeck south of 16 Mile Road, with traffic averaging 36,000 vehicles per day. This flooding causes some delays but doesn't close the road completely.			
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA			
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.			
<b>Project Number</b>	FM 01-053	<b>Priority:</b> 5	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Mitigate road flooding of Kelly Road between 15 and 16 Mile Roads			
<b>Lead Manager</b>	Paul Brouwer, Emergency Coordinator, Clinton Township, 586-723-8069			
<b>Description of Action</b>	Clinton Township area of frequent road flooding at Kelly Road between 15 and 16 Mile Roads. Delays frequently result from this flooding.			
<b>Schedule</b>	Apply for 2005 Grant and implement upon receipt of funding			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA			
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.			
<b>Project Number</b>	FM 01-020	<b>Priority:</b> 6	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate flooding of Residence in Section 15			
<b>Lead Manager</b>	Paul Brouwer, Emergency Coordinator, Clinton Township, 586-723-8069			
<b>Description of Action</b>	There is a house in Section 15 of Clinton Township that was on the NFIP's list of repetitive-loss structures. Although the home does not appear on current lists of repetitive-loss structures, it has been approved for an acquisition project, upon approval and adoption of this mitigation plan. It was calculated that this acquisition would prevent more than \$5000 of flood damages per year. The structure is located in an area designated a Zone AE floodway, and the community is a participating NFIP member. Suggested mitigation strategy is acquisition of property for removal from floodplain, converting the area to open space uses.			
<b>Schedule</b>	Apply for 2005 Grant and implement upon receipt of funding			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA			

<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local funding sources, parks & recreation funds, foundations, nonprofit organizations, and/or corporate giving programs, might provide additional funds necessary for the proposed solution.		
<b>Project Number</b>	FM 01-006	<b>Priority:</b> 7	<b>Hazard Category:</b> Infrastructure
<b>Title</b>	Develop Disaster Mitigation/Emergency Response GIS		
<b>Lead Manager</b>	Paul Brouwer, Emergency Coordinator, Clinton Township, 586-723-8069		
<b>Description of Action</b>	Clinton Township is developing a Geographic Information System (GIS) for disaster mitigation and emergency response planning. Clinton Township plans to use the system for identifying flood plain areas prone to natural flooding, surface water modeling for flood control and storm water management and identifying the spatial relationships between residential, special populations, potential hazards, and emergency services. The cost for this system has been estimated at \$20,000.00.		
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.		
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.		
<b>Potential Sources of Financial Assistance</b>	FMA, HMGP, CDBG, Clean Michigan Initiative, and USACE Challenge 21 Program.		

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## Eastpointe, City of

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<b>Project Number</b>	HM 04-006	<b>Priority:</b>	1	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Back-up Generator Project				
<b>Lead Manager</b>	Dan Hagan, Fire Chief, Eastpointe, 586-445-5057				
<b>Description of Action</b>	Install back-up generators throughout City of Eastpointe in support of essential functions. The City of Eastpointe has many key facilities located within its borders. Since it is an older community, the potential for power outages is much greater. The installation of backup generators will allow the city to perform its essential functions during loss of power events.				
<b>Schedule</b>	Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA				
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				
<b>Project Number</b>	HM 04-007	<b>Priority:</b>	2	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Reverse 9-1-1 System				
<b>Lead Manager</b>	Dan Hagan, Fire Chief, Eastpointe, 586-445-5057				
<b>Description of Action</b>	Establish a Reverse 9-1-1 system for City of Eastpointe. This system will give the city the ability to call residents and businesses with emergency information before or during an event or incident. This system could be extremely helpful for predicted weather events to alert people before the storm reaches the community.				
<b>Schedule</b>	Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA				
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				
<b>Project Number</b>	HM 04-008	<b>Priority:</b>	3	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Emergency Satellite Phone System				
<b>Lead Manager</b>	Dan Hagan, Fire Chief, Eastpointe, 586-445-5057				
<b>Description of Action</b>	This system will allow for communication between city officials during emergency incidents when primary phone lines or system is inoperable.				
<b>Schedule</b>	Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA				
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				



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## Fraser, City of

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<b>Project Number</b>	FM 01-022	<b>Priority:</b>	1	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate basement flooding in southeast Fraser				
<b>Lead Manager</b>	Robert Vanfletem, Emergency Coordinator, Fraser, 586-293-2000				
<b>Description of Action</b>	<p>In the southeast section of the City of Fraser, there is an area of houses that regularly has one to two inches of water in their basements from flooding during annual rain events. With each episode of severe rain, there are about 15 to 20 houses that report such flooding to local officials, out of about 200 homes in the at-risk area. Although there is no way to tell precisely which of the 200 homes will be the ones to experience flooding next, it is predictable that some of these homes will continue to be affected in this way until mitigation steps are taken. The community is a participating NFIP member.</p> <p>Possible mitigation strategies include building public awareness of the need to keep water away from house foundations to discourage flooding, installation of basement sump pumps in homes. Drain improvements are currently being arranged by the city.</p>				
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.				
<b>Potential Sources of Financial Assistance</b>	Existing public service announcement organizations, insurance companies, home improvement loan programs.				
<b>Project Number</b>	FM 01-023	<b>Priority:</b>	2	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Pump Station Improvements Project				
<b>Lead Manager</b>	Robert Vanfletem, Emergency Coordinator, Fraser, 586-293-2000				
<b>Description of Action</b>	The pump stations within the city need to be repaired or replaced in order to maintain an acceptable rate of discharge for floodwaters during rain events. These facilities are all outdated and between 40 and 50 years old.				
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.				
<b>Potential Sources of Financial Assistance</b>	City of Fraser Capital Improvements Budget, Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				



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## Harrison Township

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<b>Project Number</b>	FM 01-005	<b>Priority:</b>	1	<b>Hazard Category:</b>	Structural
<b>Title</b>	Flood Mitigation adjacent to Clinton River Spillway				
<b>Lead Manager</b>	Anthony Forlini, Supervisor, Harrison Township, 586-466-1406				
<b>Description of Action</b>	Harrison Township has identified property adjacent to the Clinton River Spillway that is located within the 100-year spillway. This project would help clear the floodway of obstructions and maintain the floodplain in an open state. This will also allow the property to be used as a contiguous riverfront recreation area. The projected costs for this property is estimated at \$60,000.00. Development of property adjacent to this site is presently occurring. Purchase of property located in the floodplain will reduce the amount of water entering the Clinton Watershed, thus mitigating flood hazards for Harrison Township.				
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.				
<b>Potential Sources of Financial Assistance</b>	FMA, HMGP, CDBG, Clean Michigan Initiative, and USACE Challenge 21 Program.				
<b>Project Number</b>	FM 01-004	<b>Priority:</b>	2	<b>Hazard Category:</b>	Structural
<b>Title</b>	Flood Mitigation of 3 Residential Units				
<b>Lead Manager</b>	Anthony Forlini, Supervisor, Harrison Township, 586-466-1406				
<b>Description of Action</b>	Harrison Township has identified three residential units that have had repetitive losses from flooding. It is recommended that these residential units be raised above the floodplain. The estimated values of these homes exceed \$300,000.00. The costs to elevate these homes, that are structurally sound, have been estimated at \$24,000.00. A cost/benefit analysis would justify elevating rather than the removing these residential units.				
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.				
<b>Potential Sources of Financial Assistance</b>	FMA, HMGP, CDBG, Clean Michigan Initiative, and USACE Challenge 21 Program.				
<b>Project Number</b>	FM 01-024	<b>Priority:</b>	3	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate flooding in mobile home park				
<b>Lead Manager</b>	Anthony Forlini, Supervisor, Harrison Township, 586-466-1406				
<b>Description of Action</b>	In the northwest part of Harrison Township is a manufactured home park that experiences regular and severe problems with urban flooding. There are about 300 units in the park, and about 270 of these units are regularly affected by the flooding. It is a very flat area in which runoff waters flow from uphill, and an undersized drain that backs up, have caused as much as 2.5 to 3 feet of floodwaters to accumulate throughout the park. The community is a participating NFIP member, and the County Public Works Department is also eager to solve this problem. Although the area was designated in a lesser-risk floodplain (Zone B), county officials currently consider this the most important mitigation project in the county. (The meaning intended on the FIRM by the Zone B designation is not perfectly clear, as its description includes areas that regularly suffer				

flooding so long as the flood depths are less than one foot.) An engineering study for Irwin Drain improvements has been completed and the project awaits suitable funding. The map shown here was reprinted from that study. For more information on this project, please refer to the document prepared by Hubbell, Roth & Clark, Inc. for the Macomb County Public Works Commissioner. The document is entitled "Irwin Branch Drain Improvement Project: Phase 1 – Drainage Improvement Study," and was dated December 1999 (final).

The document presents and analyzes alternative strategies to reduce flooding problems in this area, including channel cleaning, an increase in existing drain capacity, replacing nearby culverts with larger capacity concrete box drains, and/or installation of a pump station/detention pond. The document recommends drain cleaning, deepening and widening, at an estimated cost of \$1,970,000.

Partners that might be involved in this project could include the Macomb County Road Commission, State of Michigan Department of Transportation, Grand Trunk Western Railroad, and the townships of Clinton, Chesterfield, Macomb, and Harrison.

**Schedule** Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.

**Potential Sources of Financial Assistance** Flood Mitigation Assistance Program, Hazard Mitigation Grant Program, Michigan Department of Transportation, Community Development Block Grant Program (if mobile home residents qualify as moderate or low-income), local sources, foundations, nonprofit organizations, or corporate giving programs.

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**Project Number** FM 01-025 **Priority:** 4 **Hazard Category:** Structural

**Title** Mitigate flooding of 350 homes east of Selfridge ANG Base.

**Lead Manager** Anthony Forlini, Supervisor, Harrison Township, 586-466-1406

**Description of Action** In Harrison Township, all of the structures located east of the Selfridge Air National Guard Base are in a 100-year floodplain area (Zone A2). Nearly all of these houses are near canals, the Clinton River, or on the shoreline of Lake St. Clair. There are an estimated 351 houses and 10 other buildings in the area on the north side of the Clinton River. The community is a participating NFIP member. Possible mitigation strategies include elevation of homes, structural solutions such as flood walls or re-engineered canals to prevent flooding from storm surges or higher lake levels.

**Schedule** Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.

**Potential Sources of Financial Assistance** Flood Mitigation Assistance, U.S. Army Corps of Engineers, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners or businesses (also business associations or economic development funds) might also be useful to assist with project funding.

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**Project Number** FM 01-026 **Priority:** 5 **Hazard Category:** Structural

**Title** Mitigate flooding of 569 structures in east Harrison south of Clinton River

**Lead Manager** Anthony Forlini, Supervisor, Harrison Township, 586-466-1406

**Description of Action** The eastern portion of Harrison Township, south of the Clinton River, has many structures located in a 100-year floodplain (Zone A2). There are at least 569 structures in this area located east of Metropolitan Beach that are at-risk. The community is a participating NFIP member. Possible mitigation strategies include elevation of homes, structural solutions such as

	flood walls or re-engineered canals to prevent flooding from storm surges or higher lake levels.		
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.		
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.		
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance, U.S. Army Corps of Engineers, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.		
<b>Project Number</b>	FM 01-027	<b>Priority:</b> 6	<b>Hazard Category:</b> Structural
<b>Title</b>	Mitigate flood risks for 294 structures and homes south of Clinton River & west of Metro B		
<b>Lead Manager</b>	Anthony Forlini, Supervisor, Harrison Township, 586-466-1406		
<b>Description of Action</b>	<p>There is a portion of Harrison Township, south of the Clinton River and west of the Metropolitan Beach, that contains about 253 structures within a 100-year floodplain area (Zone A2). About 41 additional homes also have similar flood risks (exacerbated by runoff from street and stream) although their official classification is in a Zone B area whose meaning is somewhat ambiguous.</p> <p>Possible mitigation strategies include elevation of homes, structural solutions such as flood walls or re-engineered canals to prevent flooding from storm surges or higher lake levels.</p>		
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.		
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.		
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance, U.S. Army Corps of Engineers, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.		

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## Lenox Township

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<b>Project Number</b>	HM 04-009	<b>Priority:</b>	1	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Emergency Siren Project				
<b>Lead Manager</b>	John Gardner, Supervisor, Lenox Township, 586-727-2085				
<b>Description of Action</b>	Lenox Township is still very undeveloped but is predicted to have significant development increases in the upcoming years. Installing an emergency siren system early on will ensure all areas of the community are covered before residential and commercial development begins playing a major role in land disputes for placement of these sirens.				
<b>Schedule</b>	Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA				
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				
<b>Project Number</b>	FM 01-028	<b>Priority:</b>	2	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate basement flooding for 7 homes between Smith and 29 Mile				
<b>Lead Manager</b>	John Gardner, Supervisor, Lenox Township, 586-727-2085				
<b>Description of Action</b>	In Section 16 of Lenox Township, 7 homes are susceptible to basement flooding, between Smith Street and 29 Mile Road. The community has joined the NFIP, but has not yet had an official floodplain map created for its insurance program. Possible mitigation strategies include building public awareness of the need to keep water away from house foundations to discourage flooding, installation of basement sump pumps in homes, dry floodproofing projects.				
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.				
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, home improvement loan programs, insurance incentives. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				
<b>Project Number</b>	HM 04-010	<b>Priority:</b>	3	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Additional Water Supply Line Project				
<b>Lead Manager</b>	John Gardner, Supervisor, Lenox Township, 586-727-2085				
<b>Description of Action</b>	The current infrastructure of the Township leaves itself vulnerable to water supply problems should a significant infrastructure failure occur. The major areas of concern are located in the southern 1/3 of the township area. A second supply line will provide a means of supporting the residents and businesses should a significant failure occur.				
<b>Schedule</b>	Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				

<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA		
<b>Potential Sources of Financial Assistance</b>	State Revolving Fund, Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.		
<b>Project Number</b>	FM 01-029	<b>Priority:</b> 4	<b>Hazard Category:</b> Infrastructure
<b>Title</b>	Mitigate flooding on Lowe Plank Road between 30 and 31 Mile Roads		
<b>Lead Manager</b>	John Gardner, Supervisor, Lenox Township, 586-727-2085		
<b>Description of Action</b>	Area of severe road flooding in Lenox Township on Lowe Plank Road between 30 & 31 Mile. Traffic averages about 7,500 vehicles per day, and since floodwaters reach depths of two to three feet, the road experiences times when it is not safely usable.		
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.		
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.		
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.		

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## Macomb County

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<b>Project Number</b>	HM 04-003	<b>Priority:</b>	1	<b>Hazard Category:</b>	Life Safety
<b>Title</b>	Consstruct Mobile Home Park Saferooms				
<b>Lead Manager</b>	Macomb County Office of Emergency Management, Pete Locke, (586) 469-5270				
<b>Description of Action</b>	Construction of 'safe rooms' in mobile home and manufactured home parks. An investigation of which mobile home parks have historically suffered the most losses from tornadoes and high winds must first be performed. Funding can be used to purchase or construct and install the 'safe rooms' in existing and future home sites. In some cases, anchoring the home may be a more feasible option.				
<b>Schedule</b>	Initiate grant applications by May 1 of each year, and resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Michigan State Police Emergency Management Division.				
<b>Potential Sources of Financial Assistance</b>	State Hazard Mitigation Program.				
<b>Project Number</b>	FM 01-007	<b>Priority:</b>	2	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Macomb County Office of Emergency Management, Pete Locke, (586) 469-5270 with su				
<b>Lead Manager</b>	Water Department Supervisors for Harrison and Chesterfield Township and the City of Fraser would take lead for their respective communities				
<b>Description of Action</b>	The townships of, Harrison, Chesterfield, and the City of Fraser have identified problems with their pump stations. During periods of heavy rains, sanitary sewage is allowed to enter the storm sewers. These storm sewers enter into the Clinton Drain and then into Lake St. Clair which relates to health and safety issues at hand. If this sewage is not permitted to go to the storm sewer, the basements of the residents in the area will flood. The estimated cost to upgrade these facilities has been estimated to be \$100,000.00.				
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.				
<b>Potential Sources of Financial Assistance</b>	FMA, HMGP, CDBG, Clean Michigan Initiative, and USACE Challenge 21 Program.				
<b>Project Number</b>	HM 04-002	<b>Priority:</b>	3	<b>Hazard Category:</b>	Life Safety
<b>Title</b>	Conduct Power Distribution Study				
<b>Lead Manager</b>	Macomb County Office of Emergency Management, Pete Locke, (586) 469-5270				
<b>Description of Action</b>	Conduct a study of the electrical distribution system across Macomb County to identify who owns the power lines, which power lines are most critical in terms of customers served, and which power lines experience the most outages and impact the most customers. Identify recommendations and establish priorities for relocating critical power lines underground. The study will attempt to identify the most problematic areas within Macomb County, the key stakeholders and participants in the effort, costs associated with current maintenance and cost to bury the lines, and other pertinent information.				
<b>Schedule</b>	Initiate grant applications by May 1 of each year, and resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Michigan State Police Emergency Management Division				



<b>Potential Sources of Financial Assistance</b>	State Hazard Mitigation Program			
<b>Project Number</b>	FM 01-003	<b>Priority:</b> 4	<b>Hazard Category:</b>	Structural
<b>Title</b>	Flood Mitigation of 25 Homes in 100-year Flood Plain			
<b>Lead Manager</b>	Macomb County Emergency Management Coordinator with support from local township supervisors.			
<b>Description of Action</b>	The analysis, conducted by the Michigan Department of Environmental Quality, notes about 20 to 25 houses that may be currently within the 100-year floodplain. The Flood Mitigation Assistance Program and the Hazard Mitigation Grant Program both may be used to purchase, relocate, or flood-proof homes that are prone to flooding.			
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.			
<b>Potential Sources of Financial Assistance</b>	FMA, HMGP, CDBG, Clean Michigan Initiative, and USACE Challenge 21 Program.			
<b>Project Number</b>	HM 04-001	<b>Priority:</b> 5	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Trim Trees County-Wide			
<b>Lead Manager</b>	Macomb County Emergency Manager			
<b>Description of Action</b>	This project focuses on trimming trees to prevent encroachment of overhead lines. The project manager will conduct a survey and identify trees that if damaged by severe weather may cause infrastructure failure. This project has been estimated to cost \$20,000.00.			
<b>Schedule</b>	Initiate grant applications by May 1 of each year, and resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project should be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Michigan State Police Emergency Management Division			
<b>Potential Sources of Financial Assistance</b>	State Hazard Mitigation Program			
<b>Project Number</b>	HM 04-005	<b>Priority:</b> 6	<b>Hazard Category:</b>	Life Safety
<b>Title</b>	Upgrade MCC Fire Science Curriculum			
<b>Lead Manager</b>	Macomb County Office of Emergency Management, Pete Locke, (586) 469-5270 and the Fire Chiefs for their respective communities			
<b>Description of Action</b>	Identify additional courses that can be added to Macomb Community College fire science curriculum. Identify additional training for fire, building, planning, and zoning officials. Analyze causes of fires across Macomb County to determine opportunities for reduction. Continue monthly meetings of Macomb County Fire Inspector's Association.			
<b>Schedule</b>	Initiate grant applications by May 1 of each year, and resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project should be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Michigan State Police Emergency Management Division, National Fire Protection Association.			
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, State Hazard Mitigation Program			



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## Macomb Township

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<b>Project Number</b>	FM 01-030	<b>Priority:</b>	1	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate flooding of four residences in Section 35				
<b>Lead Manager</b>	John Brennan, Supervisor, Macomb Township, 586-992-0710				
<b>Description of Action</b>	<p>In Section 35 of Macomb Township, four houses in a floodplain area (Zone A7) are proposed for elevation so as to avoid future flood damages. The structures will be elevated 4 to 6 feet, once sufficient funding is obtained and applied. The community is a participating NFIP member.</p> <p>Suggested mitigation strategy include land acquisition of vulnerable properties or elevating the structures above base flood elevation.</p>				
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association.				
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners.				
<b>Project Number</b>	HM 04-011	<b>Priority:</b>	2	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Trailer Park Shelter Project				
<b>Lead Manager</b>	John Brennan, Supervisor, Macomb Township, 586-992-0710				
<b>Description of Action</b>	Mobile and manufactured home construction often times lends it to be extremely vulnerable during high wind events and tornadoes. The township wishes to install 'safe rooms' in the mobile home parks to provide shelter during these events.				
<b>Schedule</b>	Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA				
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				
<b>Project Number</b>	FM 01-031	<b>Priority:</b>	3	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Mitigate flooding of North Avenue				
<b>Lead Manager</b>	John Brennan, Supervisor, Macomb Township, 586-992-0710				
<b>Description of Action</b>	<p>Severe and recurrent road flooding along North Avenue in Macomb Township. This is the top-priority road flooding hazard in the county. North Avenue becomes impassible in some spots, and flooding extends for miles along it. Traffic counts in the south of the township are about 20,000 vehicles. In the middle of the township, traffic counts are about 14,500 vehicles, and in the north of the township, an average of about 7,000 vehicles use the road in a normal 24-hour weekday period.</p>				
<b>Schedule</b>	<p>Severe and recurrent road flooding along North Avenue in Macomb Township. This is the top-priority road flooding hazard in the county. North Avenue becomes impassible in some spots, and flooding extends for miles along it. Traffic counts in the south of the township are about 20,000 vehicles. In the middle of the township, traffic counts are about 14,500 vehicles, and in the north of the township, an average of about 7,000 vehicles use the road in a normal 24-hour weekday period.</p>				

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***Potential Sources of  
Technical Assistance***

Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.

***Potential Sources of  
Financial Assistance***

Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.

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## Mount Clemens, City of

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<b>Project Number</b>	FM 01-033	<b>Priority:</b>	1	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Clinton River Project				
<b>Lead Manager</b>	Doug Anderson, City Manager, Mount Clemens, 586-469-6818				
<b>Description of Action</b>	In order to maintain proper flow in the river, the city wishes to dredge certain areas that have become blocked with debris. A second action includes repairing earth walls along the riverbanks to ensure stabilization and help prevent floodwaters from rising too high.				
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.				
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				
<b>Project Number</b>	HM 04-012	<b>Priority:</b>	2	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Trailer Park Shelter Project				
<b>Lead Manager</b>	Doug Anderson, City Manager, Mount Clemens, 586-469-6818				
<b>Description of Action</b>	Mobile and manufactured home construction often times lends it to be extremely vulnerable during high wind events and tornadoes. The city wishes to install 'safe rooms' in the mobile home parks to provide shelter during these events.				
<b>Schedule</b>	Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA				
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				
<b>Project Number</b>	FM 01-032	<b>Priority:</b>	3	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Mitigate flooding on northbound Gratiot				
<b>Lead Manager</b>	Doug Anderson, City Manager, Mount Clemens, 586-469-6818				
<b>Description of Action</b>	Flooding on northbound Gratiot within the city limits of Mount Clemens. The flood-prone area of the road averages traffic of about 17,300 vehicles per day but merely causes temporary delays to the traffic.				
<b>Schedule</b>	Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.				
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				

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## New Baltimore, City of

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<b>Project Number</b>	FM 04-020	<b>Priority:</b>	1	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Improve Drainage throughout Northridge Subdivision				
<b>Lead Manager</b>	John T. Monte, P.E., (810) 794-1931, Ext 222				
<b>Description of Action</b>	Three options, ranging from 70,000 to 300,000 dollars in cost, have been identified. The options are: 1. Replace the 48 inch culvert at Northridge with an 85 x 54 inch pipe. This would solve the local problem by transferring it downstream. 2. Lower the culverts at Maple Creek and residential drives at #54123 and #54151 and reditch 2,400 feet. 3. Replace all culverts and re-ditch from 25 Mile Road to Crapeau Creek.				
<b>Schedule</b>	Apply for 2005 Pre-Disaster Mitigation Grant to address problem				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.				
<b>Potential Sources of Financial Assistance</b>	State Revolving Fund, Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				
<b>Project Number</b>	FM 04-021	<b>Priority:</b>	2	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Upgrade Harbor Creek Storm Station pumps				
<b>Lead Manager</b>	John T. Monte, P.E., (810) 794-1931, Ext 222				
<b>Description of Action</b>	Replace existing 7.5 hp pumps with 40 hp pumps and update controls at an estimated cost of \$200K. The Harbor Creek Storm Station, a storm flow lift station, is currently undersized to handle maximum storm flows with the potential for flooding to result.				
<b>Schedule</b>	Apply for 2005 Pre-Disaster Mitigation Grant to address problem				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.				
<b>Potential Sources of Financial Assistance</b>	State Revolving Fund, Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				
<b>Project Number</b>	FM 05-001	<b>Priority:</b>	3	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Upgrade Orchard Lake Emergency Overflow				
<b>Lead Manager</b>	John T. Monte, P.E., (810) 794-1931, Ext 222				
<b>Description of Action</b>	Replace existing 12-inch emergency overflow with a 30-inch overflow at an estimated cost \$58K. The existing emergency overflow is currently undersized to handle emergency situations with the potential for flooding to result.				
<b>Schedule</b>	Apply for 2005 Pre-Disaster Mitigation Grant to address problem				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.				
<b>Potential Sources of Financial Assistance</b>	State Revolving Fund, Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				
<b>Project Number</b>	FM 01-034	<b>Priority:</b>	4	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate flooding of 17 homes along Base Street southeast of Front Street				
<b>Lead Manager</b>	John T. Monte, P.E., (810) 794-1931, Ext 222				
<b>Description of Action</b>	In the city of New Baltimore, there is a shoreline area which experiences regular				

	<p>flooding. In this area, Base Street (in the area southeast of Front Street) has about 17 houses which are in the 100-year floodplain (Zone A3). The street is only 10 feet wide and access to the houses is extremely difficult in cases of flooding or emergency. Two of the houses in the area are identified as repetitive-loss structures by the NFIP, in which this community is a participating member. Sandbagging activities have been observed to try to protect other floodplain houses on this street from damages. Possible mitigation strategies include acquisition or elevation of the repetitive-loss property. Replace emergency sandbagging efforts with some sort of flood wall.</p>		
<b>Schedule</b>	Apply for 2005 Pre-Disaster Mitigation Grant to address problem		
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.		
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, re-engineering options possibly researchable by the U.S. Army Corps of Engineers. Local sources, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might also be able to provide needed funding.		
<b>Project Number</b>	FM 01-035	<b>Priority:</b> 5	<b>Hazard Category:</b> Structural
<b>Title</b>	Flood mitigation of home at far eastern edge of New Baltimore		
<b>Lead Manager</b>	John T. Monte, P.E., (810) 794-1931, Ext 222		
<b>Description of Action</b>	<p>On the far eastern edge of New Baltimore is a house that has been identified as an NFIP repetitive-loss structure, located in a 100-year floodplain (Zone A3). It no longer appears on the current list, but because of its known damages, it has been scheduled for elevation once this plan is approved and adopted. The community is a participating NFIP member.</p> <p>Suggested mitigation strategies include elevation or acquisition of structure.</p>		
<b>Schedule</b>	Apply for 2005 Pre-Disaster Mitigation Grant to address problem		
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.		
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program. Local funding sources, foundations, nonprofit organizations, corporate giving programs, or the homeowner(s) might provide additional funds necessary for the proposed solution.		
<b>Project Number</b>	FM 01-036	<b>Priority:</b> 6	<b>Hazard Category:</b> Structural
<b>Title</b>	Flood mitigation of 18 homes south of Base Street and west of Front Street		
<b>Lead Manager</b>	John T. Monte, P.E., (810) 794-1931, Ext 222		
<b>Description of Action</b>	<p>In New Baltimore, a participant in the NFIP, there are about 18 houses to the south of Base Street and west of Front Street that are located in 100-year floodplain areas (Zone A3) next to the shoreline or canals. The houses are not all in the same area, but are located around 6 different streets. The community is a participating NFIP member.</p> <p>Possible mitigation strategies include elevation of homes, structural solutions such as flood walls or re-engineered canals to prevent flooding from storm surges or higher lake levels.</p>		
<b>Schedule</b>	Apply for 2005 Pre-Disaster Mitigation Grant to address problem		
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.		
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance, U.S. Army Corps of Engineers, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.		

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## New Haven, Village of

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<b>Project Number</b>	FM 01-037	<b>Priority:</b>	1	<b>Hazard Category:</b>	Structural
<b>Title</b>	Flood Mitigation of 10 Homes near Shook Drain, Haven Ridge Road, & Clark Street				
<b>Lead Manager</b>	Ken Simms, Sr., President, New Haven, 586-749-5301				
<b>Description of Action</b>	<p>The City of New Haven has about 10 houses that are located in a 100-year floodplain (Zone A6) and therefore are at risk for flooding damages. They are located in an area near the Shook Drain, Haven Ridge Road, and Clark Street. The city is a participating NFIP member.</p> <p>Possible mitigation strategies include elevation of structures. Perhaps drain cleaning or widening or the creation of berms could help prevent flooding.</p>				
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.				
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program, U.S. Army Corps of Engineers, existing county drain maintenance/improvement funds. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				
<b>Project Number</b>	HM 04-013	<b>Priority:</b>	2	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Back-up Generator Project				
<b>Lead Manager</b>	Ken Simms, Sr., President, New Haven, 586-749-5301				
<b>Description of Action</b>	<p>The Village of New Haven has many key facilities located within its borders. The installation of backup generators will allow the city to perform its essential functions during loss of power events.</p>				
<b>Schedule</b>	Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA				
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				



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## Ray Township

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<b>Project Number</b>	FM 01-038	<b>Priority:</b>	1	<b>Hazard Category:</b>	Structural
<b>Title</b>	Mitigate flooding of 9 Structures at North Avenue and 29 Mile Road				
<b>Lead Manager</b>	Charles Bohm, Supervisor, Ray Township, 586-749-5171				
<b>Description of Action</b>	<p>An area in Ray Township at North Avenue and 29 Mile Road experiences flooding. There are 9 structures there that, in terms of their risks and the regularity of flooding, should currently be considered to be in a floodplain area. In the worst case, in February 2001, one of the houses had 6 to 7 inches of water in it. The community has joined the NFIP but not yet had its floodplain areas officially mapped for that program. Possible mitigation strategies include drain cleaning which is apparently needed to the east of this area to discourage overflow onto the relatively flat lands nearby. Such drain cleaning throughout the township could alleviate many of its flood problems. Use of berms or flood walls in key locations could protect structures until such cleaning occurs, or if upstream developmental effects render such cleaning insufficient. Improvements to the drainage system on and along North Avenue might also be appropriate.</p>				
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.				
<b>Potential Sources of Financial Assistance</b>	Michigan Department of Agriculture Inter-County Drain Program or existing county drain maintenance funds. Local funding sources, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might provide additional funds necessary for some or all of the proposed solutions.				
<b>Project Number</b>	FM 01-039	<b>Priority:</b>	2	<b>Hazard Category:</b>	Structural
<b>Title</b>	Flood Mitigation of 4 homes at North Avenue north of 26 Mile Road				
<b>Lead Manager</b>	Charles Bohm, Supervisor, Ray Township, 586-749-5171				
<b>Description of Action</b>	<p>An area in Ray Township on North Avenue just north of 26 Mile Road was flooded, with 18 inches of water in the basement of a house when the East Branch of the Coon Creek backflowed into it in 2001. (It is an older house with no backflow preventer.) There are three houses to the southwest of this flooded one that should also be considered in at least a 100-year floodplain. The community has joined the NFIP but not yet had its floodplain areas officially mapped for that program. Possible mitigation strategies include the installation of backflow preventer in home, structural flood protection or channel improvement project for the Coon Creek.</p>				
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.				
<b>Potential Sources of Financial Assistance</b>	Michigan Department of Agriculture Intercounty Drain Program or existing county drain maintenance funds. Local funding sources, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might provide additional funds necessary for some or all of the proposed solutions.				
<b>Project Number</b>	FM 01-040	<b>Priority:</b>	3	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Mitigate flooding of 26 Mile Road				
<b>Lead Manager</b>	Charles Bohm, Supervisor, Ray Township, 586-749-5171				



<b>Description of Action</b>	Ray Township road flooding on 26 Mile Road which can cause the road to close for several days, rendering it unusable to the average of 12,000 vehicles per day that otherwise would be there. In addition, aerial rescue was needed for motorists whose cars were stuck in the water.		
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.		
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.		
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.		
<b>Project Number</b>	FM 01-041	<b>Priority:</b> 4	<b>Hazard Category:</b> Infrastructure
<b>Title</b>	Mitigate flooding of North Avenue north of 29 Mile Road		
<b>Lead Manager</b>	Charles Bohm, Supervisor, Ray Township, 586-749-5171		
<b>Description of Action</b>	Ray Township road flooding on North Avenue north of 29 Mile Road, threatening nearby structures and affecting an average of 8,000 vehicles per day that would use the road.		
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.		
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.		
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.		
<b>Project Number</b>	FM 01-042	<b>Priority:</b> 5	<b>Hazard Category:</b> Infrastructure
<b>Title</b>	Mitigate flooding of 31 Mile Road		
<b>Lead Manager</b>	Charles Bohm, Supervisor, Ray Township, 586-749-5171		
<b>Description of Action</b>	Ray Township road flooding on 31 Mile Road over a length of about 2 miles. Although little-traveled (averaging only about 200 vehicles per day), the road has sometimes been completely shut down by this flooding		
<b>Schedule</b>	Initiate Flood Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.		
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.		
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.		

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## Richmond Township

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**Project Number** HM 04-014 **Priority:** 1 **Hazard Category:** Infrastructure

**Title** Emergency Siren Project

**Lead Manager** Gorden Fuerstenau, Supervisor, Richmond Township, (586) 727-8998

**Description of Action** Install an emergency siren system. Richmond Township is still very undeveloped but is predicted to have significant development increases in the future if the urban sprawl trend continues. Installing an emergency siren system early on will ensure all areas of the community are covered before residential and commercial development begins playing a major role in land disputes for placement of these sirens.

**Schedule** Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA

**Potential Sources of Financial Assistance** Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.

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**Project Number** HM 05-008 **Priority:** 2 **Hazard Category:** Life Safety

**Title** Establish Ordinance to locate all Future Power Lines Underground

**Lead Manager** Gorden Fuerstenau, Supervisor, Richmond Township, (586) 727-8998

**Description of Action** Power outages are a recurring theme associated with damage to aboveground power lines during severe winds, thunderstorms, snow and ice storms, and other severe weather incidents. This action is to have the municipal government pass an ordinance to require all new installations of power lines and electrical services to be placed below ground.

**Schedule** Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA

**Potential Sources of Financial Assistance** Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.

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## Richmond, City of

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**Project Number** HM 05-006

**Priority:** 1

**Hazard Category:**

Infrastructure

**Title** Trailer Park Shelter

**Lead Manager** John Moore, Emergency Management Coordinator, City of Richmond, 586-727-7571

**Description of Action** Mobile and manufactured home construction often times lends it to be extremely vulnerable during high wind events and tornadoes. The township wishes to install 'safe rooms' in the mobile home parks to provide shelter during these events.

**Schedule** Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA

**Potential Sources of Financial Assistance** Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.

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**Project Number** HM 05-007

**Priority:** 2

**Hazard Category:**

Life Safety

**Title** Establish Ordinance to locate all Future Power Lines Underground

**Lead Manager** John Moore, Emergency Management Coordinator, City of Richmond, 586-727-7571

**Description of Action** Power outages are a recurring theme associated with damage to aboveground power lines during severe winds, thunderstorms, snow and ice storms, and other severe weather incidents. This action is to have the municipal government pass an ordinance to require all new installations of power lines and electrical services to be placed below ground.

**Schedule** Initiate Hazard Mitigation Assistant Grant Program application by July 1 of each year and resubmit, if necessary, following every Presidential Disaster Declaration with the State of Michigan. Completion of acquisition of property should be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** Macomb County, Michigan State Police Emergency Management Division, Corps of Engineers, FEMA

**Potential Sources of Financial Assistance** Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.

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## Romeo, Village of

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<b>Project Number</b>	HM 04-004	<b>Priority:</b> 1	<b>Hazard Category:</b>	Life Safety
<b>Title</b>	Establish Hazardous Materials Response Team			
<b>Lead Manager</b>	Macomb County Office of Emergency Management, Pete Locke, (586) 469-5270 with assistance from the Shelby Township Fire Department, Thomas Means, (586) 731-3476.			
<b>Description of Action</b>	Establish a Hazardous Materials Response Team for north and central Macomb County			
<b>Schedule</b>	Initiate grant applications by May 1 of each year, and resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project should be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Michigan State Police Emergency Management Division.			
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, State Hazard Mitigation Program.			
<b>Project Number</b>	HM 05-009	<b>Priority:</b> 2	<b>Hazard Category:</b>	Life Safety
<b>Title</b>	Establish Ordinance to locate all Future Power Lines Underground			
<b>Lead Manager</b>	James Vanderlinden, Police Chief, Village of Romeo, (586) 752-3587			
<b>Description of Action</b>	Power outages are a recurring theme associated with damage to aboveground power lines during severe winds, thunderstorms, snow and ice storms, and other severe weather incidents. This action is to have the municipal government pass an ordinance to require all new installations of power lines and electrical services to be placed below ground.			
<b>Schedule</b>	Initiate Hazard Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division			
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, local utilities, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might also be able to provide needed funding.			

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## Roseville, City of

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<b>Project Number</b>	HM 04-017	<b>Priority:</b> 1	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Warning Siren Project			
<b>Lead Manager</b>	Steve Truman, City Manager, Roseville, 586-445-5440			
<b>Description of Action</b>	Install warning siren system. The City of Roseville currently uses cable TV system for severe storm warnings. Installation of warning sirens will improve the alert time to notify residents of severe weather.			
<b>Schedule</b>	Initiate Hazard Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division			
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, local utilities, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might also be able to provide needed funding.			
<b>Project Number</b>	HM 04-015	<b>Priority:</b> 2	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Back-up Hydrant Project			
<b>Lead Manager</b>	Steve Truman, City Manager, Roseville, 586-445-5440			
<b>Description of Action</b>	Install a back-up water main and dry hydrant system in the island along Gratiot Avenue to be used in the event of an infrastructure failure or power loss. System is planned to be supplied and pumped from the Marsack gravel pit located at Gratiot and 14 Mile Roads.			
<b>Schedule</b>	Initiate Hazard Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division			
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, local utilities, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might also be able to provide needed funding.			
<b>Project Number</b>	HM 04-016	<b>Priority:</b> 3	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Back-up Generator Project			
<b>Lead Manager</b>	Steve Truman, City Manager, Roseville, 586-445-5440			
<b>Description of Action</b>	The City of Roseville has many key facilities located within its borders. The installation of backup generators will allow the city to perform its essential functions during loss of power events. The generator will also help to supply power to pump water from the proposed back up water supply system.			
<b>Schedule</b>	Initiate Hazard Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.			
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division			
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, local utilities, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might also be able to provide needed funding.			
<b>Project Number</b>	FM 01-043	<b>Priority:</b> 4	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Mitigate flooding on Gratiot Avenue			

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**Lead Manager** Steve Truman, City Manager, Roseville, 586-445-5440

**Description of Action** Road flooding on Gratiot Avenue north of 12 Mile Road, in Roseville. An average of 43,000 vehicles use this section of road per day, but since the flooding usually lasts for only an hour or two, the actual number of vehicles affected is about 7,000 during these events.

**Schedule** Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.

**Potential Sources of Financial Assistance** Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.

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## Shelby Township

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**Project Number** HM 05-010

**Priority:** 1

**Hazard Category:**

Infrastructure

**Title** Trailer Park Shelter

**Lead Manager** Thomas Means, Emergency Management Coordinator, (586) 731-3476

**Description of Action** Mobile and manufactured home construction often times lends it to be extremely vulnerable during high wind events and tornadoes. The township wishes to install 'safe rooms' in the mobile home parks to provide shelter during these events.

**Schedule** Initiate Hazard Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** Macomb County, Michigan State Police Emergency Management Division

**Potential Sources of Financial Assistance** Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.

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**Project Number** HM 05-011

**Priority:** 2

**Hazard Category:**

Structural

**Title** Establish Ordinance to locate all Future Power Lines Underground

**Lead Manager** Thomas Means, Emergency Management Coordinator, (586) 731-3476

**Description of Action** Power outages are a recurring theme associated with damage to aboveground power lines during severe winds, thunderstorms, snow and ice storms, and other severe weather incidents. This action is to have the municipal government pass an ordinance to require all new installations of power lines and electrical services to be placed below ground.

**Schedule** Initiate Hazard Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** Macomb County, Michigan State Police Emergency Management Division

**Potential Sources of Financial Assistance** Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.



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## St. Clair Shores, City of

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**Project Number** FM 01-044 **Priority:** 1 **Hazard Category:** Structural

**Title** Mitigate flooding of 15 homes and 5 structures along shoreline east of Jefferson

**Lead Manager** Kenneth Podolski, City Manager, St Clair Shores, 586-445-5200

**Description of Action** In the City of St. Clair Shores, there are shoreline areas to the east of Jefferson Avenue that have numerous structures at risk from flooding—mainly when there are storm surges on Lake St. Clair or when lake levels are high. Thirteen of these houses had been proposed for elevation projects using the Hazard Mitigation Grant Program, but the project fell through. The houses are located in the 100-year floodplain (Zone A2). The base flood elevation at the lake front is about 582.5 feet, and many of these houses proposed for elevation have their first floors several feet below that mark. One of these houses has its first floor located nearly five feet below the base flood elevation. Some of the houses also have basements, which would probably flood completely, such as one that also has its first floor 3.7 feet below the base flood elevation. There are five structures currently on the NFIP's repetitive-loss list that are located in the shoreline areas of this city. Every 2 to 3 years on average, flooding causes about \$15,000 damage to each of at least 5 homes in the area, with damage estimates of twice that amount in a 10-year event. The city is a participating member of the National Flood Insurance Program.

Possible mitigation strategies include elevation or acquisition of structures that are below the base flood elevation. A structural solution such as a flood wall might be a cost-effective way to prevent shoreline and storm surge flooding.

**Schedule** Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.

**Potential Sources of Financial Assistance** The proposed HMGP elevation projects might be revived if greater amounts of matching funds can be found from local sources, foundations, nonprofit organizations, or corporate giving programs. (Local homeowners were reportedly reluctant to have elevations proceed without reassurance that a means could also be found to finance related landscape, garage, and driveway alterations to accompany such projects.) The U.S. Army Corps of Engineers might be involved in a shoreline structural solution. The Flood Mitigation Assistance Program could be used for elevations or acquisition of specific houses that are at-risk. Local funding sources, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might provide additional funds necessary for some or all of the proposed solutions.

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**Project Number** FM 01-045 **Priority:** 2 **Hazard Category:** Structural

**Title** Flood mitigation of 150 houses east of Jefferson around Statler Street

**Lead Manager** Kenneth Podolski, City Manager, St Clair Shores, 586-445-5200

**Description of Action** In the City of St. Clair Shores, there are numerous structures located in floodplain areas (Zone B), whose risks can be exacerbated by wave action from the lake. There are an estimated 150 houses of this type in the area east of Jefferson around Statler Street (and several streets to its south). Other areas of the city may have similar problems (between 10 Mile Road and 13 Mile Road, east of Jefferson), but these houses around Statler have been identified by local officials as slightly higher priority due to their more vulnerable locations. Other at-risk shoreline areas include about 150 houses around Koerber Street south of Ardmore, and 150 structures east of Jefferson in the northern half of the city (in Zones A2 and B). The community is a participating NFIP member. Possible mitigation strategies include elevation of homes, structural solutions such as flood walls or re-engineered canals to prevent flooding from storm surges or higher lake levels.

**Schedule** Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit

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	following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.		
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.		
<b>Potential Sources of Financial Assistance</b>	Flood Mitigation Assistance, U.S. Army Corps of Engineers, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.		

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<b>Project Number</b>	HM 04-018	<b>Priority:</b>	3	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Back-up Generator Project				
<b>Lead Manager</b>	Kenneth Podolski, City Manager, St Clair Shores, 586-445-5200				
<b>Description of Action</b>	The City of St. Clair Shores has many key facilities located within its borders. The installation of backup generators will allow the city to perform its essential functions during loss of power events.				
<b>Schedule</b>	Initiate Hazard Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division				
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, local utilities, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might also be able to provide needed funding.				

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## Sterling Heights, City of

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<b>Project Number</b>	HM 04-019	<b>Priority:</b>	1	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Back-up Generator Project				
<b>Lead Manager</b>	J Robert Johnson, Emergency Manager, Sterling Heights, (586) 446-2886				
<b>Description of Action</b>	The city wishes to install back-up generators at the schools throughout the city. The primary use of these generators would be to supply needed power during emergency events when the schools are being used as shelters for evacuees (WMD type event).				
<b>Schedule</b>	Initiate Hazard Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	Macomb County, Michigan State Police Emergency Management Division				
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.				

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## Utica, City of

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**Project Number** FM 01-046

**Priority:** 1

**Hazard Category:**

Structural

**Title** Flood mitigation of 7 duplexes and 3 homes on south side of Utica

**Lead Manager** Jacqueline Noonan, Mayor, Utica, (586) 731-6110

**Description of Action** On the south side of the City of Utica, there is a floodplain area (Zone A6) in which flood waters get quite deep and cause damages to 7 duplexes that are located there. These duplexes (plus 3 houses) were recently proposed for elevation projects under the Hazard Mitigation Grant Program. Estimates of 100-year flood depths have been made for these structures, and measure between 5 and 6 feet for all the duplexes! Flood depths for 10-year events have been measured at the 2 to 3 foot level. There is a senior building with three stories and parking underneath it, and flood waters affect this parking, and elevator equipment that is located on the lowest level, which significantly impedes access to and from the building. About 51 other homes and 4 buildings are also in 100-year floodplain areas around this area (including the city library), but priority must be given to these structures that are regularly being impacted by severe flood problems. The community is a participating NFIP member. Suggested mitigation strategies include elevation of affected structures, elevation of elevator equipment in senior building, use of sump pump in parking level of senior building. Drain improvement and bank stabilization activities should also have a beneficial effect.

**Schedule** Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.

**Potential Sources of Financial Assistance** Flood Mitigation Assistance Program, Hazard Mitigation Grant Program, local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners.

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**Project Number** FM 01-047

**Priority:** 2

**Hazard Category:**

Infrastructure

**Title** Additional Flood Mitigation Efforts

**Lead Manager** Jacqueline Noonan, Mayor, Utica, (586) 731-6110

**Description of Action** The city is also investigating additional measures to prevent loss from flooding. Some of these measures include using mitigation funding to dredge areas of the Clinton River which have become blocked with debris, constructing retention basins for rain events, and implementing an early warning flood system to alert all residents.

**Schedule** Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.

**Potential Sources of Technical Assistance** State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.

**Potential Sources of Financial Assistance** Flood Mitigation Assistance Program, Hazard Mitigation Grant Program. Local sources, foundations, nonprofit organizations, corporate giving programs, or involved homeowners might also be useful to assist with project funding.

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## Warren, City of

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<b>Project Number</b>	FM 01-048	<b>Priority:</b>	1	<b>Hazard Category:</b>	Structural
<b>Title</b>	Flood mitigation of 12 homes around Autumn Lane and Jane Court				
<b>Lead Manager</b>	Lt Dennis Devooght, Emergency Manager, Warren, 586-756-2800				
<b>Description of Action</b>	<p>The City of Warren reports that there is an area of relatively low elevation that experiences recurrent basement flooding, around Autumn Lane and Jane Court. There are about 10 or 12 houses there that have had waters of 6 to 12 inches in their basements. The area is not identified as a floodplain by the NFIP, but the community is a participating member in that program.</p> <p>Possible mitigation strategies include building public awareness of the need to keep water away from house foundations to discourage flooding; installation of basement sump pumps; adjusting footing drains in houses so that current ties into sanitary sewers will no longer cause flooding.</p>				
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.				
<b>Potential Sources of Financial Assistance</b>	Existing public service announcement organizations, insurance companies, home improvement loan programs.				

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## Washington Township

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<b>Project Number</b>	FM 01-049	<b>Priority:</b>	1	<b>Hazard Category:</b>	Structural
<b>Title</b>	Flood mitigation of 2 homes				
<b>Lead Manager</b>	Gary Kirsh, Supervisor, Washington Township, (586) 677-4219				
<b>Description of Action</b>	<p>Section 15 of Washington Township has two homes, which recently suffered at least a foot of water in their basements. Since this flooding was the effect of runoff waters in that rapidly urbanizing area's particular topography, the area was not considered to be in a floodplain when the area was mapped for NFIP classification purposes. The community is a participating NFIP member.</p> <p>Possible mitigation strategies include drain cleaning or improvement to expand its capacity, or other structural projects to slow or divert the flow of runoff waters; sump pump installation in basements.</p>				
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.				
<b>Potential Sources of Financial Assistance</b>	Michigan Department of Agriculture Intercounty Drain Program or existing county drain maintenance funds. Local funding sources, foundations, nonprofit organizations, involved homeowners, or corporate giving programs might provide additional funds necessary for some or all of the proposed solutions.				
<b>Project Number</b>	FM 01-050	<b>Priority:</b>	2	<b>Hazard Category:</b>	Infrastructure
<b>Title</b>	Mitigation of Road Flooding in Washington Township				
<b>Lead Manager</b>	Gary Kirsh, Supervisor, Washington Township, (586) 677-4219				
<b>Description of Action</b>	<p>Washington Township area with road flooding, major sheet flows of runoff water, and basement flooding. The road carries 2,500 vehicles per day, on average, but has not actually needed to be closed off because of this flooding.</p> <p>Mitigation strategies for these areas of road flooding may include the following: Cleaning, reconstructing, widening, or changing the type of roadside drainage infrastructure serving the road.</p> <p>Improving the capacity of city sewers and associated drains that serve important roadways, including projects that separate storm sewer systems from sanitary sewer systems.</p> <p>Construction of water retention basins, where possible, to allow waters to drain off roads more quickly without overwhelming local storm sewer capacity or threatening nearby properties.</p>				
<b>Schedule</b>	Initiate Flood Mitigation Program grant application by May 1 of each year. Resubmit following every Presidential Disaster Declaration with the state of Michigan. Completion of project will be accomplished within one year of receiving funding.				
<b>Potential Sources of Technical Assistance</b>	State Hazard Mitigation Program, State NFIP Program, Michigan Stormwater-Floodplain Association, Corps of Engineers.				
<b>Potential Sources of Financial Assistance</b>	Hazard Mitigation Grant Program, and existing sewer and transportation programs, budgets, and allotments. Other local sources, foundations, nonprofit organizations, corporate giving programs, or involved businesses and homeowners might also be able to assist with project funding.				